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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,817	08/21/2001	Christian Wagner	(Z) 98003 P US	9363

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EXAMINER

LEROUX, ETIENNE PIERRE

ART UNIT

PAPER NUMBER

2171

DATE MAILED: 07/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/934,817

Applicant(s)
Wagner et al

Examiner
Etienne P LeRoux

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jun 23, 2003
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 and 39-41 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 and 39-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Aug 21, 2001 is/are a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/255,137.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 36 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by USPAT 4,739,396 to Hyatt.

Regarding claims 1, 36 and 37, Pat '396 discloses a light source [Fig 16, 1634] that emits radiation, a mount [Fig 16F, 1632], an optical element [Fig 16F, 1610] fastened in said mount, wherein said optical element [Fig 16F, 1610] is acted on by said radiation such that a heat supply results from said radiation that lacks symmetry corresponding to the shape of said optical element [Fig 13], and a connecting structure [Fig 16B, 1621] between said optical element [Fig 16F, 1610] and said mount [Fig 16F, 1632], having a symmetry characteristic that does not correspond to the shape of the optical element, a single- or multi-part thermally conducting element arranged in operative connection with said optical element and said mount and having a form of heat transport that effects an at least partial compensation of the asymmetry of temperature distribution in said optical element [Fig 16B, 1620, 1621, 1622, and Fig 16F, 1630 and 1632], at least one passively thermally conducting part arranged in thermal contact with said optical

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element, which part covers a portion of the cross section of said optical element which is not exposed to said radiation, and which part reduces temperature gradients in said optical element [Fig 16F, 1633], wherein said passive thermally conducting element comprises an assembly of portions of different material [Fig 16F, 1630, and 1632/1633].

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5-12 and 17-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPAT 5,805,273 to Unno (hereafter Pat '273) in view of USPAT 5,883,704 to Nishi et al (hereafter Pat '704).

Regarding claims 1-12 and 17-24, Pat '273 discloses a light source [Fig 1, 2] that emits radiation, an optical element [Fig 2, 41], wherein said optical element [Fig 2, 41] is acted on by said radiation such that a heat supply resulted from said radiation that lacks symmetry [Fig 2, 42] corresponding to the shape of said optical element [col 8, lines 20-28], a slit-shaped image field [Fig 1, 7], said optical element is arranged near a field plane [Fig 1, W]

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Regarding claims 1-3, Pat '273 discloses above essential elements of the claimed invention except for a connecting structure between said optical element and said mount having a symmetry characteristic that does not correspond to the shape of the optical element. Pat '704 discloses a connecting structure between said optical element and said mount having a symmetry characteristic that does not correspond to the shape of the optical element [Fig 2, G1, G2, 4]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Pat '273 to include a connecting structure between said optical element and said mount having a symmetry characteristic that does not correspond to the shape of the optical element as taught by Pat '273 for the purpose of securing lens elements to the lens barrel to create a projection optical system [col 11, lines 23-24 and col 11, lines 33-39].

Regarding claims 2 and 3, Pat '273 discloses a single- or multi-part thermally conducting element arranged in operative connection with said optical element and said mount and having a form of heat transport that effects an at least partial compensation of the asymmetry of temperature distribution in said optical element [Fig 2, 13, 14]

Regarding claim 3, examiner maintains that in Hyatt '396 thermally conducting elements comprising adjustable portions is inherent. Examiner notes, the MPEP § 2112.01 states "[w]here the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the

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products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.’ *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).”

Regarding claims 25, 27 and 29, Pat ‘273 discloses a reticle [Fig 1, 8], the illumination of which lacks rotational symmetry [Fig 1].

Regarding claims 26, 28, 30, 32 and 33, Pat ‘273 discloses said reticle illumination consists of off-axis illumination [col 5, lines 24-27].

Regarding claims 31 and 34, Pat ‘273 discloses said optical element is arranged near a pupil plane [Fig 1, 3]

Regarding claim 35, the modified teaching of Pat ‘273 discloses the essential elements of the claimed invention except for said connecting structure comprises portions of different materials. It would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Pat ‘273 to include said connecting structure comprises portions of different materials for the purpose of making the apparatus as economical as possible.

Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Pat ‘273 and Pat ‘704 as applied to claim 1 above, and further in view of USPAT 3,626,176 to Tsugami (hereafter Pat ‘176).

Regarding claims 13-16, the modified teaching of Pat ‘273 discloses the essential elements of the claimed invention except for said optical element is a mirror. Pat ‘176 discloses said optical element is a mirror [Figs 1 and 2]. It would have been obvious to one of ordinary

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skill in the art at the time the invention was made to further modify Pat '273 to include said optical element is a mirror as taught by Pat '176 for the purpose of preventing glass breakage of the reflecting mirror [abstract].

Claims 4, 36, 37 and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Pat '273 and Pat '704 and further in view of USPAT 5,313,333 to O'Brien et al (hereafter Pat '333).

Regarding claim 4, Pat '273 discloses at least one passively thermally conducting part arranged in thermal contact with said optical element, which part covers a portion of the cross section of said optical element which is not exposed to said radiation, and which part reduces temperature gradients in said optical element [Fig 2, 13, 14].

Regarding claims 4, 36 and 37, Pat '273 discloses the essential elements of the claimed invention except for single- or multi-part passive thermally conducting element arranged in operative connection with said optical element and said mount and having a form of heat transport that effects an at least partial compensation of the asymmetry of temperature distribution in said optical element wherein said passive thermally conducting element comprises an assembly of portions of different material. Pat '333 discloses single- or multi-part passive thermally conducting element arranged in operative connection with said optical element and said mount and having a form of heat transport that effects an at least partial compensation of the asymmetry of temperature distribution in said optical element wherein said passive thermally

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conducting element comprises an assembly of portions of different material [Fig 1, 24, 26, 30, 44 and col 3, lines 10-43]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Pat '273 to include single- or multi-part passive thermally conducting element arranged in operative connection with said optical element and said mount and having a form of heat transport that effects an at least partial compensation of the asymmetry of temperature distribution in said optical element wherein said passive thermally conducting element comprises an assembly of portions of different material as taught by Pat '333 for the purpose of compensating for thermal shifts in system focal length while maintaining radial and angular alignment of the lens relative to the laser diode source [abstract].

Regarding claims 39-41, the modified teaching of Pat '273 discloses the essential elements of the claimed invention except for said connecting structure comprises adjustable portions. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the connecting structure comprise adjustable portions, since it has been held that the provision of adjustability, where needed, involves only routine skill in the art. *In re Stevens*, 101 USPQ 284 (CCPA 1954).

Response to Arguments

5. Applicant's arguments filed 6/23/2003, have been fully considered but they are not fully persuasive.

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Applicant states on page 9 “The features of claims 38 and 41 have been added to claim 3. The features of claim 42 have been added to claim 4. Hyatt does not disclose or suggest each feature of the rejected claims as now amended.” Examiner is not persuaded. Claims 38, 41 and 42 were rejected in the previous office action over the combination of Unno ‘273 and Nishi ‘704 and further in view of O’Brien ‘333. In response to applicant’s amendment, claims 3 and 4 are rejected in supra office action over the combination of Unno ‘273 and Nishi ‘704 and further in view of O’Brien ‘333. No new art rejection is made.

Applicant states on page 10, “The text gives no hint about adaptation of the cooling arrangement to a light exposure.” Examiner is not persuaded. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., adaptation of the cooling arrangement to a light exposure) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant states on page 10, “Consequently, Hyatt neither shows the claimed feature of a connecting structure between said optical element and said mount having a symmetry characteristic that does not correspond to the shape of the optical element.” Examiner is not persuaded. Applicant is referred to Hyatt’s Fig 16F which shows the mounting structure [Fig 16F, 1632] clearly lacks a symmetry characteristic that does not correspond to the shape of the optical element [Fig 16F, 1610].

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Applicant states on page 11, "Nishi in no way addresses cooling of lenses, and any deviations from a rotational symmetric shape of lenses G1, G2 is only motivated by the demand for gas supply holes." Examiner is not persuaded. Nishi '704 discloses in col 3, lines 52-61:

The present invention provides a projection exposure apparatus, wherein a mask pattern is projected to a photosensitive substrate, comprising a projection optical system having a plurality of optical members (glass materials) at least one of which has a temperature characteristic of index of refraction different from that of the other glass material, **and a temperature control device for controlling a temperature of at least one of the optical members, and further wherein an imaging characteristic of the projection optical system is controlled by using the temperature control device.**

One of ordinary skill in the art would be able to understand from above disclosure that Nishi '704 is addressing cooling of lenses by providing a temperature control system. Furthermore, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., deviations from a rotational symmetric shape of lenses is only motivated by the demand for gas supply holes) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant states on page 11, "Unno is diametrical to the idea of passive thermal compensation and hence gives no suggestion at all for a combination of Unno and Nishi as suggested by the office action." Examiner is not persuaded. Regarding the rejection of claims 1-3 in supra office action, examiner maintains that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Unno to include a connecting

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structure between the optical element and the mount having a symmetry that does not correspond to the shape of the optical element as taught by Unno for the purpose of securing lens elements to the lens barrel to create a projection optical system.” It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Unno to include details of mounting the optical elements to the projector case as taught by Nishi.

Applicant states on page 12, “None of the cited references addresses passive cooling of optical elements adapted to the geometry of their exposure.” In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., passive cooling of optical elements adapted to the geometry of their exposure are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Arguendo, even though above is not claim language, it can be reasoned that adaptation of the optical elements to the geometry of their exposure is inherent in the disclosure of the cited references. Furthermore, Pat ‘273 discloses passive cooling of optical elements [Fig 2, 13, 14].

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Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne (Steve) LeRoux whose telephone number is (703) 305-0620.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached at (703) 308-1436.

Any inquiry of a general nature relating to the status of this application or processing procedure should be directed to the receptionist whose telephone number is (703) 305-3900.

Etienne LeRoux

July 8, 2003



FRANTZ COBY
PRIMARY EXAMINER